

U.S. Patent Application Serial No. 09/622,694
Amendment dated October 20, 2003
Reply to OA of June 20, 2003

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A lighting equipment having a reflector comprising:
a substrate comprised of a thermoplastic resin;
containing an alicyclic structure;
selected from the group consisting of a ring-opening polymer of a norbornene-based monomer, a ring-opening polymer hydrogenate of a norbornene-based monomer, an addition polymer of a norbornene-based monomer, an addition polymer of a norbornene-based monomer and vinyl compound, and a vinyl alicyclic hydrocarbon polymer ~~on which is provided a metal film.~~

Claim 2 (Original): The lightning equipment as set forth in claim 1, further comprising a lens for condensing light of a light source reflected by said reflector.

Claim 3 (Original): The lightning equipment as set forth in claim 1, further comprising a lamp cover allowing passage of light of a light source reflected by said reflector

Claim 4 (Original): The lightning equipment as set forth in claim 1, further comprising a lamp cap covering part or all of a light source.

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Claim 5 (Original): The lightning equipment as set forth in claim 1, further comprising a light guide having a light incident face to which is introduced at least one type of light selected from the group of light from a light source and light from a light source reflected by a reflector and an emission face emitting the incident light introduced from the incident surface to the outside.

Claim 6 (Original): A lighting equipment comprising:

- a reflector having a substrate comprised of a thermoplastic resin containing an alicyclic structure on which is formed a reflecting layer with a reflectance of at least 70%,
- a lens for condensing light of a light source reflected by the reflector,
- a lamp cover allowing a passage of light of the light source reflected by the reflector,
- a lamp cap covering part or all of the light source, and
- a light guide having an incident face to which is introduced at least one type of light selected from light from the light source and light from the light source reflected by the reflector and an emission face emitting the incident light introduced from the incident face to the outside.

7. (Canceled)

8. (Canceled)

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Claim 9 (Original): A reflector for a lighting equipment comprising a substrate of a thermoplastic resin containing an alicyclic structure on which is provided a metal layer.

Claim 10 (Previously Presented): The reflector for a lighting equipment as set forth in claim 32, wherein said reflecting layer has a thickness of 5 to 10,000 nm.

Claim 11 (Previously Presented): The reflector for a lighting equipment as set forth in claim 32, characterized in that said reflecting layer is provided by vapor deposition.

Claim 12 (Previously Presented): The reflector for a lighting equipment as set forth in claim 9, characterized in that said substrate is comprised of a resin composition containing a thermoplastic resin containing an alicyclic structure and at least one compounding agent selected from the group consisting of a partial ether compound of a polyhydric alcohol, a soft polymer, a filler, and a compound incompatible with the thermoplastic resin having an alicyclic structure.

Claim 13 (Previously Presented): The reflector for a lighting equipment as set forth in claim 9, characterized in that said substrate is comprised of a resin composition comprised of a thermoplastic resin containing an alicyclic structure to which is blended a soft polymer having a glass transition temperature of not more than 30°C.

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Claim 14 (Previously Presented): The reflector for a lighting equipment as set forth in claim 9, characterized in that the substrate is comprised of a resin composition comprised of a thermoplastic resin containing an alicyclic structure to which is blended a crystalline polymer.

Claim 15 (Previously Amended): The reflector for a lighting equipment as set forth in claim 9, characterized in that the substrate is comprised of at least one type of thermoplastic resin containing an alicyclic structure selected from the group consisting of a ring-opening polymer of a norbornene-based monomer, a hydrogenate of a ring-opening polymer of a norbornene-based monomer, and an addition polymer including addition type repeating units of an at least three-ring norbornene-based monomer.

Claim 16 (Previously Presented): The reflector for a lighting equipment as set forth in any of claims 9 to 15, characterized in that the amount of repeating units containing polar groups in the thermoplastic resin containing an alicyclic structure is not more than 50 wt %.

Claim 17 (Previously Presented): The reflector for a lighting equipment as set forth in any of claims 9 to 15, characterized in that the thermoplastic resin containing an alicyclic structure has

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a melt flow rate, measured by JIS-K6719 at a temperature of 280°C and a load of 2.16 kgf, of 4 to 100 g/10min.

Claim 18 (Previously Presented): The reflector for a lighting equipment as set forth in any of claims 9 to 14, characterized in that the thermoplastic resin containing an alicyclic structure has repeating units comprised of ring structures other than norbornene rings.

Claim 19 (Previously Presented): A lens for a lighting equipment comprised of a resin composition comprising:

a thermoplastic resin containing an alicyclic structure selected from the group consisting of a ring-opening polymer of a norbornene-based monomer, a ring-opening polymer hydrogenate of a norbornene-based monomer, an addition polymer of a norbornene-based monomer, an addition polymer of a norbornene-based monomer and vinyl alicyclic hydrocarbon polymer, and

at least one compounding agent selected from the group consisting of a partial ether compound of a polyhydric alcohol, a partial ester compound of a polyhydric alcohol, a soft polymer, a filler, and a compound incompatible with the thermoplastic resin having an alicyclic structure.

Claim 20 (Previously Presented): A lamp cover for a lighting equipment provided in front of a light source and allowing passage of light of the light source, said lamp cover for a lighting

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equipment comprised of a thermoplastic resin containing an alicyclic structure selected from the group consisting of a ring-opening polymer of a norbornene-based monomer, a ring-opening polymer hydrogenate of a norbornene-based, an addition polymer of a norbornene-based monomer, an addition polymer of a norbornene-based monomer and vinyl-compound, and a vinyl alicyclic hydrocarbon polymer.

Claim 21 (Previously Presented): A lamp cap for a lighting equipment covering part of all of the light source, said lamp cap comprised of a thermoplastic resin containing an alicyclic structure selected from the group consisting of a ring-opening polymer of a norbornene-based monomer, a ring-opening polymer hydrogenate of a norbornene-based monomer, an addition polymer of a norbornene-based monomer, an addition polymer of a norbornene-based monomer and vinyl compound, and a vinyl alicyclic hydrocarbon polymer.

Claim 22 (Currently Amended): A light guide for a lighting equipment provided in a light chamber of the lighting equipment and having a light incident face to which is introduced at least one type of light selected from the group of light from a light source and light from a light source reflected by a reflector and an emission face emitting the incident light introduced from the incident surface to the outside, said light guide for a lighting equipment comprised of a thermoplastic resin containing an alicyclic structure having a glass resin containing an alicyclic structure having a glass

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transition temperature of at least 90°C selected from the group consisting of a ring-opening polymer of a norbornene-based monomer, a ring-opening polymer hydrogenate of a norbornene-based monomer, an addition polymer of a norbornene-based monomer, an addition polymer of a norbornene-based monomer and vinyl compound, and a vinyl-alicyclic hydrocarbon polymer.

Claim 23 (Previously Presented): The lens for a lighting equipment as set forth in claim 19, in which the thermoplastic resin containing an alicyclic structure is selected from the group consisting of a ring-opening polymer of a norbornene-based monomer, a ring-opening polymer hydrogenate of a norbornene-based monomer, an addition polymer of a norbornene-based monomer, and an addition polymer of a norbornene-based monomer and vinyl compound.

Claim 24 (Previously Presented): The lamp cover for a lighting equipment as set forth in claim 20, in which the thermoplastic resin containing an alicyclic structure is selected from the group consisting of a ring-opening polymer of a norbornene-based monomer, a ring-opening polymer hydrogenate of a norbornene-based monomer, an addition polymer of a norbornene-based monomer, and an addition polymer of a norbornene-based monomer and vinyl compound.

Claim 25 (Previously Presented): The lamp cap for a lighting equipment as set forth in claim 21, in which the thermoplastic resin containing an alicyclic structure is selected from the group

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consisting of a ring-opening polymer of a norbornene-based monomer, a ring-opening polymer hydrogenate of a norbornene-based monomer, an addition hydrogenate of a norbornene-based monomer, an addition polymer of a norbornene-based monomer, and an addition polymer of a norbornene-based monomer and vinyl compound.

Claim 26 (Previously Presented): The light guide for a lighting equipment as set forth in claim 22, in which the thermoplastic resin containing an alicyclic structure is selected from the group consisting of a ring-opening polymer of a norbornene-based monomer, a ring-opening polymer of a norbornene-based monomer, a ring-opening polymer hydrogenate of a norbornene-based monomer, an addition polymer of a norbornene-based monomer, and an addition polymer of a norbornene-based monomer and vinyl compound.

Claim 27 (Previously Presented): A lighting equipment comprising:

a reflector having a substrate on which is formed a reflecting layer with a reflectance of at least 70%,

a lens comprised of a thermoplastic resin containing an alicyclic structure for condensing light of a light source reflected by the reflector,

a lamp cover allowing a passage of light of the light source reflected by the reflector,

a lamp cap covering part or all of the light source, and

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a light guide having an incident face to which is introduced at least one type of light selected from light from the light source and light from the light source reflected by the reflector and an emission face emitting the incident light introduced from the incident face to the outside.

Claim 28 (Previously Presented): A lighting equipment comprising:

a reflector having a substrate on which is formed a reflecting layer with a reflectance of at least 70%,

a lens for condensing light of a light source reflected by the reflector,

a lamp cover comprised of a thermoplastic resin containing an alicyclic structure allowing a passage of light of the light source reflected by the reflector,

a lamp cap covering part or all of the light source, and

a light guide having an incident face to which is introduced at least one type of light selected from light form the light source and light from the light source reflected by the reflector and an emission face emitting the incident light introduced from the incident face to the outside.

Claim 29 (Previously Presented): A lighting equipment comprising:

a reflector having a substrate on which is formed a reflecting layer with a reflectance of at least 70%,

a lens for condensing light of a light source reflected by the reflector,

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a lamp cover allowing a passage of light of the light source reflected by the reflector,
a lamp cap comprised of a thermoplastic resin containing an alicyclic structure covering part
or all of the light source, and
a light guide having an incident face to which is introduced at least one type of light selected
from light from the light source and light from the light source reflected by the reflector and an
emission face emitting the incident light introduced from the incident face to the outside.

Claim 30 (Previously Presented): A lighting equipment comprising:

a reflector having a substrate on which is formed a reflecting layer with a reflectance of at
least 70%,
a lens for condensing light of a light source reflected by the reflector,
a lamp cover allowing a passage of light of the light source reflected by the reflector,
a lamp cap covering part or all of the light source, and
a light guide comprised of a thermoplastic resin containing an alicyclic structure having an
incident face to which is introduced at least one type of light selected from the light source and light
from the light source reflected by the reflector and an emission face emitting the incident light
introduced from the incident face to the outside.

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Claim 31 (Previously Presented): The lighting equipment as set forth in claim 1, characterized in that said metal film is comprised of a reflecting layer with a reflectance of at least 70%.

Claim 32 (Previously Presented): The reflector for a lighting equipment as set forth in claim 9, characterized in that said metal film is comprised of a reflecting layer with a reflectance of at least 70%.